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A STUDY ON THE RELATIONSHIP BETWEEN COVID-19 VACCINATION AND ABORTION IN AL-DEWANIYAH CITY

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A B S T R A C T

At first, The clinical trials for the COVID-19 vaccine excluded pregnant women. Conversely, observational research has demonstrated that immunization of pregnant women is relatively safe. In such scenario, it is crucial to look at the potential relationship between the different COVID-19 vaccination kinds and the likelihood of an abortion. Finding a link between pregnancy termination and the several COVID-19 types is the aim of this investigation.

vaccinations administered in Al-Dewaniyah City. This study was a retrospective cross-sectional analysis that was carried out at three private general hospitals in the city of Al-Dewaniyah. During the course of the research project, data was collected from pregnant women who were hospitalized for the purpose of having an abortion through the use of computerized medical records and telephone interviews. After that, women were questioned in order to achieve the goal of gathering information. received, as well as the outcome of their current pregnancy (whether it resulted in abortion or not). The study includes the medical data of 107 women who were diagnosed with abortion. Among them, 13.1% were able to successfully continue their pregnancy. Women who received vaccinations had a substantially lower gestational age compared to those without vaccines, and a greater chance of diabetes (OR: 0.09, 95% CI: 0.01-0.89, p=0.040) and hypertension (OR: 3.1, 95% CI: 1.34-6.97, p=0.008). An increased risk of receiving COVID-19 immunizations was not demonstrated to be associated with spontaneous abortion (odds ratio: 1.07, 95% confidence interval: 0.21–5.49, p =0.937). Vaccination against COVID-19 does not increase the risk of abortion in the population of expectant mothers who get the shot in the first or second trimester of their pregnancy. The results about the safety of giving vaccinations to pregnant women during the early phases of pregnancy need to be confirmed by carrying out more clinical trials.

K E Y W O R D S

COVID-19, abortion, vaccine,

Introduction

The Pfizer-BioNTech vaccine received approval Following the release of the outcomes of the Phase III clinical trial, it is anticipated that the deployment will take place in Iraq in month of December 2020. In February of 2021, the application for approval of the Oxford-AstraZeneca vaccine, which was designed as a secondary method of vaccination, was approved [1]. There was a continuation of the immunization of pregnant women and other vulnerable populations after the acceptance of alternate immunizations [1]. Growing research suggests that pregnant women run a higher risk of serious consequences if they do contract the COVID-19 virus. Among these are serious sickness, miscarriage, stillbirth, placental thrombosis, and early delivery. While there is accumulating data to the contrary, pregnant women are not particularly vulnerable to COVID-19.

In addition to maternal obesity and advanced maternal age, the existence of concurrent medical conditions, such as hypertension and diabetes, also increases the likelihood of unfavorable outcomes [2]. Examples of such medical problems include diabetes and hypertension. A significant reduction in the likelihood of pregnant women and other individuals suffering from serious disease, requiring hospitalization, or passing away as a result of the COVID-19 virus is achieved with the administration of the vaccination [2]. Inactivated viruses are used in all licensed vaccinations, which is the basis for the recommendation that pregnant women receive a vaccination [2]. This is the rationale that underpins the recommendation. On the other hand, there is not enough evidence to suggest that immunizations against COVID-19 offer a favorable balance between the benefits and hazards when they are delivered to pregnant women [7The main factors contributing to this problem are the purposeful The exclusion of pregnant women from essential trials and the absence of a control group that has not received the vaccine. Pregnant women are not included in the key research. The CDC, ACOG, and other organizations advocate for the inclusion of the COVID-19 vaccine in prenatal care for pregnant women amidst the pandemic. [10,11]. This holds true even when safety data—especially long-term data—is not widely available. A spontaneous abortion does not always translate into worse perinatal outcomes [13], especially when RNA-based differences are taken into account [14,15]. Various assertions state that this is not always the case. The aim of this study was to determine whether abortion and the different COVID-19 immunizations are related among pregnant women who were admitted to a private hospital network in Al-Dewaniyah City with an abortion diagnosis. An important thing to draw your attention to is the paucity of research in this specific field.

Materials and Methods

Methodology utilised the researchers employed official records data to perform a retrospective cross-sectional analysis. In Al-Dewaniyah City, Iraq, there are three general hospitals that are privately owned and operated, and these facilities provided the clinical data obtained. Every pregnant woman who was admitted to the hospital for an abortion between January and December of 2021 was included in the study, and their obstetric data was included. We were able to obtain their contact information from the file, and we then began a conversation with them over the phone. All women who had received their vaccinations before to becoming pregnant were not included in the study. Those patients who either did not have sufficient electronic data or who expressed a desire to not participate in the study were excluded from the analysis.

Data collection

The data obtained includes demographics, clinical information, and obstetric details. Additionally, information on COVID-19 infections and immunisations, as well as the result of the pregnancy (either full abortion or continuation), were acquired. Any missing obstetric details were gathered through phone interviews. The information provided includes details regarding age and obstetrics, including parity and potential risk factors for abortion, such as being above the age of 35 and having a history of abortion. It also covers health disorders such as diabetes, hypertension, and thyroid issues. Furthermore, we inquired about the uniformity or combination of the COVID-19 vaccination doses, in addition to their quantity and type.

Statistical analysis

The SPSS application, namely version 22, was utilized in order to do the statistical analysis on the data. The information was given in terms of the count of categorical variables as well as the frequency with which they occurred. For the purpose of comparing pregnant women who had been vaccinated and those who had not been vaccinated, as well as those who had abortions and those who did not, the $\chi 2$ test was utilized. For the purpose of determining the factors that significantly predict abortion among women who have had vaccines, a binary It was determined to conduct a logistic regression analysis. A two-tailed test was performed on each and every one of the tests that were carried out, and the significance threshold was set at a minimum of 0.05.

Results

Out of Only those ladies who matched the particular criteria for inclusion and exclusion were taken into consideration for the study. There were 107 women who were admitted to the hospital with intentions of having an abortion. Thirteen-point one percent of these ladies went on to have second pregnancy after the initial one. The vaccine against COVID-19 was reported to have been received by an overwhelming majority of women, including 86% of them. The vaccinations that were given to these ladies were as follows: 33.6% received An RNA vaccination was given to 65.4%, a viral vector vaccination to 9.3%, a combination of the two to 11.2%, and a single dosage to 52.3%. The demographics of the women admitted to the hospital with an abortion diagnosis are shown in the table that follows.

categorized according to whether or not they had received vaccinations. There were just 9.3 percent of the total group that were going through their first pregnancy, while the age range of 25 to 35 years old was the most prevalent, accounting for 57.9 percent of the organization. Ninety-seven percent of women gave birth between the sixth and twelfth week of their pregnancies. This was the time most commonly observed. Among the women who were examined, 55.1% of them experienced missed abortions. The remaining women, on the other hand, had incomplete abortions (18%), threatening abortions (13.1%), or abortions that were unavoidable (2.8%). Particularly noteworthy is the fact that out of all the cases, 28 individuals were able to have successful pregnancies as a result of medical assistance at the hospital. The results of the study showed that women who had received vaccinations exhibited indications of hypertension at an earlier stage of pregnancy ($p = 0.031$) compared to those who had not received vaccinations. (Table 1).

Table 1: Characteristic data of women with abortion (with and without vaccination)

Characterizations	*All women with abortion N= 107*	*Non-vaccinated women abortion N=15*	*Vaccinated women with abortion N=92*	*P value*
Age n(%)				
19-25 years	13 (12.1%)	2 (13.3%)	11 (12.0%)	0.858
25-35 years	62 (57.9%)	8 (53.3%)	54 (58.7%)	
>35 Years	32 (29.9%)	5 (33.3%)	27 (29.3%)	
Type of abortion				
Threatened	15 (14.0%)	1 (6.7%)	14 (15.2%)	0.141
Inevitable	3 (2.8%)	1 (6.7%)	2 (2.2%)	
Incomplete	30 (28.0%)	6 (40.0%)	24 (26.1%)	
Missed	59 (55.1%)	7 (46.7%)	52 (56.5%)	
Diabetes				
No	102 (95.3%)	14 (93.3%)	88 (95.7%)	0.0577
Yes	5 (4.7%)	1 (6.7%)	4 (4.3%)	
Hypertension				
No	106 (99.1%)	1 (6.7%)	0 (0.0%)	<0.001
Yes	1 (0.9%)	14 (93.3%)	92 (100.0%)	
Thyroid				
No	106 (99.1%)	15 (100.0%)	91 (98.9%)	0.566
Yes	1 (0.9%)	0 (0.0%)	1 (1.1%)	

For vaccination status (p=0.261), dosage (p=0.331), timing (0.794), and dosage (0.012), the research found no statistically significant differences between full-term abortion women and those who continued with the pregnancy to term. (Table 2).

Table 2: Comparison between women with abortion outcomes and those who continue their pregnancy

Characterizations	*All women with abortion N= 107*	*Non-vaccinated women abortion N=15*	*Vaccinated women with abortion N=92*	*P value*
Age n(%)				
19-25 years	13 (12.1%)	2 (13.3%)	11 (12.0%)	0.858
25-35 years	62 (57.9%)	8 (53.3%)	54 (58.7%)	
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Diabetes				
No	102 (95.3%)	14 (93.3%)	88 (95.7%)	0.0577
Yes	5 (4.7%)	1 (6.7%)	4 (4.3%)	
Hypertension				
No	106 (99.1%)	1 (6.7%)	0 (0.0%)	<0.001
Yes	1 (0.9%)	14 (93.3%)	92 (100.0%)	
Thyroid				
No	106 (99.1%)	15 (100.0%)	91 (98.9%)	0.566
Yes	1 (0.9%)	0 (0.0%)	1 (1.1%)	

An A significant predictive model for complete abortion was discovered, which includes characteristics In addition to the immunization record, the gestational age, consanguinity, smoking, and existence of comorbidities should be included. The statistical analysis, which resulted in a chi-square value of 27.96 and a p-value of 0.001, demonstrated that there is a significant connection between the two variables. The Nagelkerke R Square score for the model is 0.227, which indicates that it explains 22.7% of the variation in total abortion prediction in the data. Despite this, the immunization did not appear to have any noticeable independent impact regarding the outcome. In addition to the odds ratio (OR) of 1.07, the p-value was found to be 0.937, and the confidence interval (CI) for the test ranged from 0.21 to 5.49. On the other hand, factors such as diabetes and being older than 35 years old were identified as significant indications. The odds ratio for age was 3.1, indicated by a p-value of 0.008 and a confidence range ranging from 1.34 to 6.97 at the 95% level of certainty. With a p-value of 0.040 and a 95% confidence interval ranging from 0.01-0.89, the odds ratio for diabetes was found to be 0.09.

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Table 3: Predictors of complete abortion among all women admitted with abortion.

Characterizations	*P value*	*OR*	*95% C.I*
Age	0.008	3.061	1.344-6.971
Diabetes	0.040	0.089	0.009-0.891
Hypertension	0.999	0.000	0.000-0.000
Thyroid	0.999	0.000	0.000-0.000
Vaccination	0.937	1.068	0.208-5.486

Discussion

Among the Three were 107 pregnant women who were admitted to the hospital with a diagnosis of abortion on their medical records.

13.1% were successful in completing the pregnancy to delivery. Among pregnant women, 11.2% received a combination of immunisations, whereas 86% received a single dose either during the first or second trimester. There were no notable disparities in the types or quantities of vaccines administered to women who had abortions and those who did not, regardless of their vaccination status. Advanced maternal age, diabetes, and positive consanguinity are established risk factors for abortion. However, immunisation did not emerge as a significant predictor of abortion. Based on these findings, there is no discernible relationship between immunisation and abortion. Possible causes may include the vaccinated group's significantly diminished risk factors for abortion, such as being younger and having fewer instances of consanguinity. However, according to these findings, there is no evidence to suggest that vaccines pose any risk to reproductive health, particularly with reference to abortion. Observational studies, particularly those that utilized mRNA immunization during pregnancy, have provided strong support for the current study, which has acquired significant acceptance. The findings of a trial that was carried out by Shimabukuro and colleagues [7] demonstrated that the It is quite safe to give pregnant women mRNA COVID-19 vaccinations. Initial data utilized in the study came from the v-safe pregnancy registry, the "v-safe health checker" monitoring system, and the vaccine adverse event reporting system. Three groups were compared by the researchers after an exhaustive investigation including over 22,000 women: women who had received vaccinations, women who had

not, and women who had received immunizations after giving birth. The results of the study show no relationship between possible risks and the number, kind, or timing of vaccination doses.

[16]. The majority of the women who underwent diagnostic procedures for abortion were admitted within the first three months of their pregnancies (90.7%). The majority of these women were observed in the group that had been vaccinated (92.4%), in contrast to the group that had a full-term abortion (0%). The outcomes of our study have been supported by information that was gathered from two extensive examinations that were based on populations. Vaccination and early abortion have not been found to be associated with one another, according to these investigations. [15,17].

Moreover, multiple observational studies have discovered no detrimental impacts on the developing foetus after the injection of mRNA COVID-19 Vaccinations that are administered Pregnant women are systematically omitted from significant clinical trials, and there is a lack of a control group that does not receive the vaccination. Pregnant women are not included in the key research. The CDC, ACOG, and other organizations advise incorporating the COVID-19 vaccine into prenatal care for pregnant women amidst the pandemic. yet were able to safely bring the pregnancy to term, regardless of whether or not they had received immunizations, is probably the most important strength of the study.

Conclusions

Women who received the COVID-19 vaccination in the first or second trimester of their pregnancy showed no statistically significant correlations between the various abortion techniques and the vaccination. This was the same whether the women got a combination of vaccinations or just one mRNA vaccine. More clinical trials that are geared at enhancing the safety of COVID-19 immunizations given in the early stages of pregnancy are definitely required.

precisely organized. In addition to this, it is of the utmost importance to collect information regarding the efficiency of the security measures taken by the offspring over the long term.

References

1. Assiri A, Al-Tawfiq JA, Alkhalifa M, et al.: Initiating the COVID-19 vaccination campaign in Saudi Arabia: insights gained and future plans. The article titled "Travel Med Infect Dis" was published in 2021 and has the reference number 43:102119. The article can be accessed using the DOI 10.1016/j.tmaid.2021.102119.

2. Coronavirus disease (COVID- 19): pregnant women and the birthing process (2020). Accessed on the 15th of March, 2020: https://www.who.int/news-room/questions-and-answers/item/coronavirus - disease-covid-19-pregnancyand-childbirth.

3. Data on COVID-19 during Pregnancy: Symptoms and severity of the mother's illness (2021). It was accessed on January 4, 2021.: https://stacks.cdc.gov/view/cdc/99912.

4. Gurol-Urganci I, Jardine JE, Carroll F, et alThe national cohort research was conducted in England to investigate the maternal and perinatal outcomes of pregnant women who were infected with SARS-CoV-2 at the time of birth. 2021, 225:522.e1-e11, American Journal of Obstetrics and Gynecology, 10.1016/j.ajog.2021.05.016

5. Baral G, Shrestha O, Baral RS: Thrombotic pathology in the placenta of a pregnant woman who tested positive for COVID. J Nepal Health Research Council, Volume 19, Issue 1, Pages 206-8, 2021, 10.33314/ jnhrc.v19i1.3403

6. Allotey J, Stallings E, Bonet M, et al.: This study presents a comprehensive systematic review and meta-analysis of the clinical symptoms, risk factors, and maternal and perinatal outcomes of coronavirus illness 2019 in pregnant women. BMJ, 2020, volume 370, issue m3320, 10.1136/bmj.m3320
7. Shimabukuro TT, Kim SY, Myers TR, et alInitial results of the mRNA COVID-19 vaccine's safety in pregnant women are shown here. In the year 2021, the New England Journal of Medicine published 384:2273-82.
8. COVID-19 vaccines while pregnant or breastfeeding. (2021). Accessed: October 20, 2022: https://www.cdc.gov/coronavirus/2019- ncov/vaccines/ recommendations/pregnancy.html#:~:text=CDC%20recommends%20COVID%2D
9. COVID-19 Vaccination Considerations for Obstetric-Gynecologic Care . (2021). Accessed: January 6, 2023: https://www.acog.org/clinical/ clinical-guidance/practice-advisory/articles/2020/12/covid-19-vaccinationconsideration
10. COVID-19 vaccines, pregnancy and breastfeeding. (2021). Accessed: September 27, 2022: https://www.health.govt.nz/covid-19-novel-coronavirus/covid-19-vaccines/covid-19-vaccine-pregnancyand-breastfeeding.
11. Pregnant women are now eligible for the Pfizer COVID-19 vaccine . (2021). Accessed: July 23, 2021: https://medicinetoday.com.au/system/ files/pdf/RMT2021-04-004-REYNOLDS.pdf.
12. Maykin MM, Heuser C, Feltovich HIndividuals who are pregnant are deserving of the protection that is provided by SARS-CoV-2 vaccinations. 10.1016/j.vaccine.2020.12.007 Vaccine, volume 39, issue 1, pages 171-2, 2021
13. Rouse CE, Eckert LO, Babarinsa I, et al.: Case definition and procedures for the collection, analysis, and presentation of maternal vaccination safety data are presented in this article. The topics covered include spontaneous abortion and ectopic pregnancy. In 2017, the journal Vaccine published 35:6563-74. 10.1016/j.vaccine.2017.01.047
14. Magnus MC, Gjessing HK, Eide HN, Wilcox AJ, Fell DB, and Håberg SE conducted a study on the correlation between the administration of the Covid-19 immunization during pregnancy and the occurrence of a miscarriage in the first trimester. In the year 2021, the New England Journal of Medicine published 385:2008-10.
15. Kharbanda EO, Haapala J, DeSilva MAbortion that occurred spontaneously after receiving the COVID-19 immunization while pregnant, as reported by Vazquez-Benitez G, Vesco KK, Naleway AL, and Lipkind HS. 10.1001/jama.2021.15494 Journal of the American Medical Association, Volume 326, Issue 1629-31, 2021
16. Fell DB, Dhinsa T, Alton GD, et al.: Vaccination against COVID-19 during pregnancy is associated with unfavorable outcomes throughout the postpartum period. 10.1001/jama.2022.4255 [JAMA], volume 327, issue 1478-87, year 2022
17. Goldshtein I, Steinberg DM, Kuint J, It was Chodick G, Segal Y, and Shapiro. The association of BNT162b2 is led by Ben David S. and Ben-Tov A. Vaccination against COVID-19 during pregnancy may have implications for neonatal and early infant outcomes. 176:470-7, Journal of the American Medical Association Pediatrics, 2022. 10.1001/ jamapediatrics.2022.0001
18. Rottenstreich M, Sela HY, Rotem R, Kadish E, In a multicenter retrospective cohort study, Wiener-Well Y and Grisaru-Granovsky S investigated the relationship between the rate of immunization and

maternal and newborn outcomes in relation to the Covid-19 vaccination administered during the third trimester of pregnancy. BJOG, Volume 129, Issue 25, Pages 248–55, 10.1111/1471-0528.16941
19. Lipkind HS, Vazquez-Benitez G, DeSilva M, et al.: Receipt of COVID-19 vaccination during pregnancy and preterm or small-for-gestational-age at birth: eight integrated health care organizations, United States, December 15, 2020-July 22, 2021. Morbid Mortal Weekly Report, Volume 71, Issues 26-30, 2022, 10.15585/mmwr.mm7101e1 Reference.